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SECTION _____

MECHANICAL AND ELECTRICAL EQUIPMENT
GENERAL REQUIREMENTS

1. APPLICABILITY

1.1. This section applies to all mechanical and electrical work, including materials and equipment, and is subject to the requirements of the "General Provisions," "General Conditions," and "Special Conditions" sections of this specification.

2. MATERIAL

2.1 Appliances, Fixtures, etc., furnished shall be current models for which replacement parts are available.

3. APPROVAL OF MATERIAL

3.1 Within 30 days after the receipt of notice to proceed, the Contractor shall submit to the Contracting Officer ~~a complete list, hereinafter called the "Material List" showing, for each item in the Material Schedule set forth below, the name of the manufacturer of the product that he proposes to use in the project. Consideration will not be given to partial lists submitted from time to time.~~

~~3.2 As soon as possible after receipt of the Contracting Officer's approval of the "Material List," the Contractor shall submit,~~ for each item in the Material Schedule below, either complete catalog data or shop drawings, as required by sub-subparagraphs ~~3.2.1 and 3.2.2~~ 3.1.1 3.1.2, below.

3.~~1~~.1 Catalog data shall be submitted for each item on the Material Schedule below, except where the same information is to be included on shop drawings.

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3.1.2 Shop drawings (See General Conditions) shall be submitted for each item: (1) Identified by an asterisk (*) in the Material Schedule below; (2) That cannot be described adequately by catalog data alone; or (3) for which shop drawings are required elsewhere in the specification.

3.2 Data and shop drawings shall be coordinated and included in a single submission. Later submission of shop drawings will not be considered except where a single submission is impracticable because of a standard trade practice that requires later submissions or where, due to the size of the project, the Contracting Officer permits multiple submissions. Where shop drawings are to be submitted later, a list of the items involved must be included with the catalog data. Partial submissions not in accordance with the above will be returned without action.

3.3 Data and shop drawings shall be identified as required by the "General Conditions" section of this specification and, in addition, each shall be identified by the name of the item and the applicable specification paragraph number.

MATERIAL SCHEDULE

Item	Shop Drawings Required (*)
Automatic Temperature Control	*
Air Filters	*
Thermal Insulation for -	
Airconditioning	*

3.4 None of the items listed in the above Material Schedule shall

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be purchased, delivered to the site, or installed, until the item has been approved. After the items have been approved, no substitution will be permitted except where such substitution is considered by the Contracting Officer to be in the best interest of the Government or is due to circumstances beyond the control of the Contractor.

3.05 Should the Contractor fail to comply with any of the requirements of the preceding subparagraphs, i.e.--

(1) Fail to submit the catalog data and shop drawings in accordance with the above schedule to the Contracting Officer, for approval within 30 days after the date of receipt of notice to proceed;

(2) Fail to name items in accordance with specification requirements and of the best quality and grade;

then the right is reserved by the Contracting Officer to select any or all items in the above Material Schedule, which selection shall be final and binding upon the Contractor. The materials selected or approved, as the case may be, by the Contracting Officer, shall be used in the work at no additional cost to the Government.

3.06 Attention is called to the fact that, except as otherwise provided in other sections, all mechanical and electrical items used in the project shall be substantially the same as items of the same manufacture which, on the date of opening of bids, have been in successful commercial use and operation for not less than one year in projects and units of comparable size.

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The right is reserved by the Contracting Officer to require Contractor to submit a list of buildings where they have been in operation, so that such investigation as may be deemed necessary may be made before approval.

4. TESTS

4.1 The Contractor shall test the equipment installed under this specification and demonstrate its proper operation to the Government Representative.

5. INSTALLATION OF EQUIPMENT

5.1 All appliances and equipment shall be installed and connected in accordance with the best engineering practice and in accordance with manufacturers' instructions and recommendations. Ausiliary electric connections, etc., recommended by the manufacturer or required for proper operation, shall be furnished and installed complete.

6. COORDINATION

6.1 The Contractor shall coordinate the work so that:

(1) Interferences between existing mechanical, electrical, architectural, and structural work will be avoided; and

(2) Within the limits indicated on the drawings, the maximum practicable space for operation, repair, removal, and testing of mechanical, electrical, and other equipment will be provided.

6.2 Pipes, conduits, ducts, etc., shall be kept close as possible to ceiling, walls, columns, etc., in order to take up a minimum amount of space. Ducts, equipment, etc., shall be located so that they will not interfere with the intended use of other equipment.

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6.3 All offsets, fittings, etc., necessary in order to accomplish the requirements of the foregoing subparagraph shall be furnished and installed without additional expense to the Government.

6.4 Before any inserts are set or any mechanical or electrical equipment are installed, the Contractor shall prepare and submit for approval by the Government Representative composite coordination drawings for all rooms in which equipment is to be installed and in which the probability of interference exists, as determined by either the Contractor or the Government Representative. The composite layouts shall show the work of all trades in the area covered, shall be drawn to a scale not smaller than 1/2" = 1'-0", and shall show clearly in both plan and elevation whether all work can be installed without interference.

6.5 Any work installed prior to approval or coordination drawings shall be at the Contractor's risk, and subsequent relocations required to avoid interferences shall be made without additional expense to the Government. In case interference develops, the Government Representative will decide which equipment shall be relocated, regardless of which equipment was installed first.

7. SINGULAR NUMBER

7.1 Where any device or part of equipment is herein referred to in the singular number (such as "the filter"), such reference shall be deemed to apply to as many such devices as are required

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to complete the installation as shown on the drawings.

8. PAINTING AND FINISHING

8.1 Factory finishes, shop priming, and special protective coatings are specified in the individual mechanical and electrical sections.

8.2 Where factory finishes are provided on equipment and no additional field painting is specified, all marred or damaged surfaces shall be touched up or refinished so as to leave a smooth, uniform finish at the time of final inspection as directed by the Government Representative.

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SECTION

SHEET METAL AND AIR-HANDLING APPARATUS

(Airconditioning)

1. WORK INCLUDED

1.1 This section of the specification includes the furnishing and installation of modifications to the existing air-distribution systems for airconditioning, ventilating and heating the building as described herein and as indicated on the drawings, and is subject to the requirements of the "Mechanical and Electrical Equipment, General Requirements" section of the specification.

2. STANDARD REFERENCES

2.1 References in this section of the specification to paragraphs not otherwise identified mean paragraphs in the Standard Airconditioning Specification, General Services Administration, Public Buildings Service, dated December 1964.

2.2 Wherever Federal Specification, Military Specification, Standard Details, etc., are referenced in the Standard Airconditioning Specification, latest editions, etc., will apply to this project in accordance with the requirements of the clauses entitled "Standard References" and "Standard Details" of the "General Conditions" section of this specification.

3. GENERAL REQUIREMENTS

3.1 All modifications to air-distribution systems shall be installed and adjusted in such a manner that they will, subject to the capacity limits hereinafter specified, and under both design and

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partial loads, maintain in all conditioned spaces dry bulb temperatures between 74 F. and 78 F. with a wet bulb temperature not over 64F.

3.2 All equipment, such as mixing boxes, (Government furnished) filters, etc., shall fit the space shown on the project drawings, and provide accessibility for servicing and inspecting apparatus at least equal to that shown.

3.3 Where "approximate" is used in this section, equipment furnished shall be manufactured nearest catalog size.

4. NOISE LEVELS

4.1 The "equipment components" of room noise levels (those portions of total room noise levels attributable solely to airconditioning and ventilating equipment) resulting from the operating of the air-conditioning and ventilating systems, whether generated within the rooms or transmitted to the rooms through ducts, walls or floors, etc., shall not exceed the values given in the following table when measured as specified in paragraphs 592 and 593.

MAXIMUM "EQUIMENT COMPONENTS" OF
ROOM NOISE LEVELS

	SOUND PRESSURE LEVELS - db.							
	OCTAVE BANDS - cps.							
	20/75	75/150	150/300	300/600	600/1200	1200/2400	2400/4800	4800/10000
General Office Space	63	55	47	41	37	35	33	32

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4.2 When sound pressure levels are read with equipment which has octave bands different from those shown on the above chart, the values may be interpolated from the values shown on the above chart.

5. AIR FILTERS

5.1 Except as specified below, air filter generally shall be in accordance with paragraphs 42 to 46, inclusive, and specifically as follows:

5.1.1 High-efficiency particulate air filters shall be individually tested and certified to have an efficiency of not less than 99.97 percent when tested with 0.3 micron dioctylphathalate smoke in accordance with Military Standard MIL-STD-282, and to have a static pressure drop of not greater than 1-inch water gage when clean and when operating at rated capacity on air at 70 degrees F. Filters shall be equipped with gaskets and constructed by pleating a continuous sheet of filter medium into closely spaced pleats separated by corrugated inserts, or by honeycomb design construction of the pleated filter medium. Filter medium shall be all-glass-fiber material with or without aluminum or mineral-fiber separators. Adhesive sealer shall be of self-extinguishing rubber-base type. Filter frame shall be 3/4-inch thick exterior fire-resistant plywood assembled in a rigid manner. Overall frame dimensions shall be correct to 1/16 inch, and squareness shall be maintained to within 1/8-inch. Installation of the filters in the casing shall be given special attention to insure a tight fit, and all joints shall be well made to insure a positive seal

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5.2 Capacities of air filters shall be as indicated on drawings.

6. DUCTWORK

6.1 Sheet metal ductwork shall be in accordance with general requirements in paragraphs 103 to 109, inclusive, and specific requirements of the following paragraphs:

(a) Round ductwork - 120 and 121.

6.1.1 Duct sealers (sealants) and duct tape shall be water resistant, compatible with other materials, and suitable for the service involved.

6.1.1.1 Surfaces shall be cleaned, and otherwise treated, prior to application, as recommended by the manufacturer.

6.1.1.2 Duct sealers (sealants), except those used in conjunction with impermeable tape, shall be fire resistive compounds,non-flammable (ASTM D93) in wet state.

6.1.1.3 Duct sealers (sealants) used in conjunction with impermeable tape shall consist of non-oxidizing resin compound and shall have a 150 p.s.i. sheer strength. The sealer shall not support combustion in the dry state.

6.1.2 Duct tapes shall be pressure-sensitive type, at least 2 inches wide.

6.1.2.1 Tape used with a sealer compound shall have polyethylene coating on 80-thread count cloth, total thickness of 18 mils, and shall be furnished by same manufacturer as sealer to insure compatibility (proper curing).

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6.1.2.2 Vapor seal adhesive tape, and that used without sealer compound shall be vinyl plastic, flame resistant, i.e., shall not support combustion. It shall conform to Federal Specification PPP-T-66d, except certain minimum physical properties (based on Federal Standard 147) shall be as follows:

Adhesion to steel	40 ounce/inch width
Tensile strength	18 pounds/inch width

6.2 Ductwork shall be constructed in accordance with the pressure classifications indicated on the drawings.

7. CONSTRUCTION OF DUCTWORK TO CONTROL LEAKAGE

7.1 The construction of ductwork shall be suitable for the service and tests specified, and shall be compatible with leakage test requirements specified herein.

7.2 The Contractor shall take every precaution in selecting the types of construction (joints, seams dampers, splitters, etc.) to be used in fabricating medium-pressure and high-pressure ductwork. When selecting a particular method of construction, careful consideration shall be given to the experience and proficiency of the fabricating and installing workmen and to location of, and clearances around, the various runs of duct.

7.3 Medium pressure sections, i.e., those designed to operate at static pressures (inches, W.G.) up to 6 shall be audibly leak tested at static pressures of 8 inches. W.G. Construction shall be free of all audible leaks in quiet ambient, and shall limit leakage rate to 10 percent of the test section volume.

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8. DUCT SUPPORTS

8.1 Duct supports shall be in accordance with paragraph 129 and paragraphs 132 to 135, inclusive.

8.2 Supports shall be constructed of the same material as the ducts they support.

9. FLEXIBLE DUCTWORK

9.1 Each run of flexible ductwork shall be in one piece and shall be in accordance with paragraphs 144, 145 and 147.

9.2 Contractor shall submit proof that flexible ducts conform to the latest requirements of NFPA Standard No. 90A, and have a flame spread of not over 25 with a smoke development of not over 50.

10. AIR MIXING BOXES (EXISTING)

10.1 Air mixing boxes shall be modified as indicated on drawings.

11. AIR TERMINALS

11.1 Air terminals generally, shall be in accordance with paragraphs 189 to 193, inclusive, and the following specific paragraphs:

Grilles - 195 to 199, inclusive

11.2 Supply grilles shall be adjustable 4-way directional type. Adjustment shall be by means of individually adjustable curved vanes spaced not more than 3/4-inch apart.

11.3 Exposed frame corners of terminals shall be die-formed construction, fabricated of individual frame pieces welded and ground smooth, mechanically fastened with a rear reinforcing plate equal in thickness to the exposed frame pieces, or provided with a trim piece.

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11.3.1 Exposed mitered frame corners with or without trim pieces may have crack openings of not more than .010-inch for frame widths up to 1-1/2 inches; for frame widths greater than 1-1/2 inches the crack opening may be not more than .025-inch. Exposed surface blemishes shall not exceed .010-inch.

11.3.2 Frame corners shall be aligned at 90-degree angles to each other.

11.4 Air terminals that are damged in any way in shipping, handling or installation shall be replaced by the Contractor at no additional charge to the Government.

12. CLEANING, ADJUSTMENTS AND TESTS

12.1 Cleaning, adjustments and tests shall be in accordance with the following paragraphs:

Cleaning	-	571
Adjustments	-	572, 573, 576, 577, and 579
Tests	-	590 to 595, inclusive

12.1.1 Parts of air handling systems constructed for medium-pressure (2 to 6 inches, W.G.) shall be audibly leak-tested -- the same as specified under "Construction of Ductwork to Control Leakage."

12.1.1.1 Under test pressure, no audible leaks shall be evident.

12.1.2 Surfaces of facilities tested shall be bare and exposed until leak tests have been approved; insulation and other concealments inadvertently installed shall be removed as required by Government Representative at no additional expense to the Government.

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12.1.3 All methods used to eliminate leakage shall be permanent and workmanlike, using materials as specified elsewhere herein.

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SECTION
TEMPERATURE CONTROL SYSTEM

1. WORK INCLUDED

1.1 This section of the specification includes the furnishing and installation of room temperature controls for the areas as described herein and indicated on the drawings, and is subject to the requirements of the "Mechanical and Electrical Equipment, General Requirements" section of this specification.

2. STANDARD REFERENCES

2.1 References in this section of the specification to paragraphs mean paragraphs in the Standard Airconditioning Specification, Public Buildings Service, General Services Administration, dated December 1964.

2.2 Wherever Federal Specifications, Military Specifications, Standard Details, etc., are referenced in the Standard Airconditioning Specification, latest editions, etc., will apply to this project in accordance with the requirements of the clauses entitled "Standard References" and "Standard Details" of the "General Conditions" section of this specification.

3. AUTOMATIC TEMPERATURE CONTROL

3.1 The room temperature controls generally shall be in accordance with paragraphs 468 and 469, but shall be a combination of electronic and pneumatic controls as shown on drawings. Pneumatic controls and an extension of existing building pneumatic system. Installation may be done by an authorized

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representative of the control system subcontractor (manufacturer); should be contractor? however, this shall in no way either relieve the subcontractor of his responsibilities or void any other requirements of the specifications.

3.2 A temperature adjustment device, calibrated in degrees, shall be externally mounted on an electronic-pneumatic transducer which shall be located above the ceiling and accessible through ceiling panel.

3.3. Room automatic temperature control shall be by remote electronic type sensors mounted at the ceiling supply grille as shown on drawings. Sensors shall be maximum of 1/4" O.D. and shall be a maximum of 8" below the face of the supply grille.

4. CONTROL SEQUENCE

4.1 Upon a rise in space temperature the temperature sensing element modulates the volume controller open.

5. DEMONSTRATION

5.1 The temperature control manufacturer shall demonstrate calibration, installation, and operation of controls in accordance with paragraph 534.

6. PNEUMATIC CONTROL PIPING

6.1 Pneumatic control piping shall be in accordance with paragraphs 551 to 554, inclusive.

6.2 Except as specified below, aluminum tubing shall be used for all pneumatic lines (piping).

6.2.1 Aluminum tubing shall be in accordance with Federal Specification WW-T-700/1, Type I, H14 temper, including flattening and flaring tests.

6.2.2 Fittings used with aluminum tubing shall be forged or bar-stock aluminum of the compression or flare type.

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6.2.3 Connections between aluminum and either copper or brass shall be coated, or otherwise protected to prevent deterioration and malfunctioning.

7. ELECTRONIC CONTROL SYSTEMS

7.1 Electronic control systems shall be in accordance with paragraphs 556, 565, and 568, except last sentence of paragraph 556.

7.2 Individual room controls and zone controls may be connected to any convenience outlet circuit, provided the power consumption does not exceed 300 watts.

8. CLEANING

8.1 Cleaning shall be in accordance with applicable portions of paragraph 571.

9. ADJUSTMENTS

9.1 Adjustments shall be in accordance with applicable portions of paragraphs 572 to 579, inclusive.

10. TESTS

10.1 Tests shall be in accordance with applicable portions of paragraphs 580 to 595, inclusive.

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SECTION

THERMAL INSULATION
(Mechanical)

1. WORK INCLUDED

1.1 This section of the specification includes the furnishing and installation of thermal insulation for ducts and is subject to the requirements of the "Mechanical and Electrical Equipment, General Requirements" section of this specification.

2. GENERAL REQUIREMENTS

2.1 Insulation materials shall be installed in a first class manner with smooth and even surfaces. Scrap pieces of insulation shall not be used where a full length section will fit.

2.2 All adhesives, sealers, vapor coatings, jackets, etc., shall be compatible with the materials to which they are applied, and shall not corrode, soften or otherwise attack such material in either the wet or dry state.

2.3 Every package or standard container of insulation, jackets, cements, adhesives and coatings delivered at the building for use, and also all samples called for by the Contracting Officer must have a manufacturer's stamp or label attached giving name of manufacturer, brand and description of material. Samples shall not be submitted unless called for by letter from the Contracting Officer.

2.4 Insulation shall show no physical changes that adversely affect its service qualities, under conditions of normal usage at the intended use temperature.

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2.5 Insulation materials shall not be applied until all surfaces to be covered are clean and dry; all foreign material, such as rust, scale, dirt, etc., has been removed;and, where specified, surfaces have been painted. Insulation shall be clean and dry when installed and during the application of any finish.

2.6 Unless otherwise specified herein, the application of all insulation materials, accessories and finishes shall be in accordance with the manufacturer's published recommendations.

2.7 A complete moisture and vapor seal shall be provided wherever insulation terminates against metal hangers, anchors and other projections through insulation on cold surfaces for which a vapor seal is specified.

2.8 Unless otherwise specified, the term "finished spaces" as used in this specification shall include all areas except spaces above furred ceilings.

2.9 Unless otherwise specified, the word "concealed" shall refer to all areas other than "finished spaces."

3. FIRE HAZARD RATING

3.1 Except for the materials listed hereinafter, all insulation materials, coatings and other accessories shall have a fire hazard rating not to exceed 25 for flame spread and 50 for fuel contributed and smoke developed. The materials which are excepted are:

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a. Canvas covering applied over insulation surfaces.

b. Flexible unicellular insulation permitted only for runouts and wastes up to 12 feet long.

c. Nylon anchors for securing insulation to ducts or equipment.

3.2 Ratings shall be determined by the Standard Method of Test for Surface Burning Characteristics of Building Materials, ASTM E-84 or NFPA No. 255. Corresponding ratings determined by the National Bureau of Standards in accordance with the requirements of Interim Federal Standard No. 00136, "Flame Spread Properties of Materials" will also be acceptable.

3.3 Underwriters' Laboratories, Inc., label or listing, satisfactory test results from the National Bureau of Standards, or satisfactory certified test report from an approved testing laboratory will be required to indicate that fire hazard ratings for materials proposed for use do not exceed those specified.

3.4 Flameproofing treatments subject to deterioration due to the effect of moisture or high humidity, are not acceptable.

4. INSULATION MATERIALS

4.1 Basic insulation materials for the various services shall be selected from those listed in Table I.

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TABLE I

INSULATION MATERIALS

(Column Headings ?)

CDE	Mineral Fiber	HH-I-558a					
Cold Ducts		Exposed	A	Rigid	1 or 2		1
& Equipment		Concealed	A		1 or 2		1
		Concealed	B	I	6 or 7	B-3	1
	Cellular Glass	HH-I-551c		I			1
-							

4.2 Jackets

4.2.1 Vapor barrier jackets, type I, and III, shall be in accordance with Interim Federal Specification HH-B-00100.

4.3 Staples, Bands, Wires.

4.3.1 Staples shall be outward clinching type of corrosion resisting steel.

4.3.2 Bands shall be galvanized steel, aluminum, brass, or nickel copper alloy, of 3/4-inch nominal width. The band thickness exclusive of coating shall be not less than 0.005-inch for steel and nickel copper alloy, 0.007-inch for aluminum, and 0.01-inch for brass.

4.3.3 Wire shall be 14-gage nickel copper alloy or copper clad steel, or 18-gage, soft annealed galvanized steel.

4.4 Adhesives, coatings, sealing compounds and protective finishes in the following categories shall be used for application of insulation.

Category 1. Lap Adhesive for Vapor Barrier Jackets - MIL-A-3316 B, Class 2.

Category 2. Bonding Adhesives - for securing insulation to metal surfaces -

(a) MIL-A-3316 B, Class 2 for temperatures up to 200 F.

Category 3. Bedding Compound and Joint Sealers - MIL-B-19564 A.

Category 4. Coating Compound - Vapor Barrier Treatment - MIL-C-19565 B, Type I or II

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5. INSULATION FOR AIR-HANDLING AND AIR-DISTRIBUTION EQUIPMENT AND DUCTS

5.1 The following air-distribution ducts shall be insulated and vapor sealed to prevent excessive heat transmission and condensation with materials and accessories as specified under "Insulation Materials".

5.1 Airconditioning systems of all types, velocities and pressures (with Group CDE materials, except as otherwise indicated below).

a. All supply ducts.

b. All mixing boxes, etc.

5.2 External insulation is not required for the following:

a. Flexible ductwork (insulated and uninsulated) specified under other sections of the specifications.

5.3 Insulation for air-distribution equipment and apparatus shall be rigid blocks or boards with a minimum dimension of 12 inches and a maximum dimension of 48 inches, except as follows:

5.3.1 Insulation for concealed ducts and equipment shall be either rigid blocks or boards or preformed pipe insulation as specified above or mineral fiber flexible insulation of 1-pound density and 1-1/2 inches thick.

5.4 Block or board insulation and molded pipe insulation shall be 1-inch thick for all equipment and ducts.

5.5 Block and board insulation shall be secured tightly and smoothly with not less than 50 percent coverage of bonding adhesive, Category 3, and with galvanized steel, aluminum, brass, or nickel copper alloy bands spaced not more than 12 inches apart. The insulation shall be protected under bands at corners with metal corner strips or clips. The supports shall be either light angles or clips spot welded or otherwise securely attached to the duct or casing. The supports shall be

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punched with openings and the bands passed through these openings. After the insulation on airconditioning equipment and ducts is in place, all joints, seams, chipped edges, etc., shall be filled with bedding compound, Category 4.

5.6 In lieu of securing the block and board insulation with adhesive and bands, the Contractor may secure the insulation tightly and smoothly with speed washers and welded pins or metal or nylon anchors secured to the ducts with waterproof adhesive specially designed for attachment to metal surfaces and in successful use for that purpose for at least 5 years. Anchors or pins shall be spaced not over 18 inches apart each way, not over 3 inches from edges of insulation joints, and shall be capable of supporting a load of 20 pounds per anchor or pin. Insulation shall be applied with all joints in close mechanical contact and all open joints, breaks, punctures and voids in insulation on airconditioning equipment and ducts shall be filled with vapor barrier coating compound, Category 5. Where anchors or pins are welded to ducts, a welding procedure must be used which will not distort the duct, will not burn through or mar the interior finish of the duct, but which will develop the full strength of the anchor. Anchor and pin sizes and diameters shall be as recommended by the manufacturer for the type and thickness of the insulation specified.

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5.7 The flexible insulation for concealed ducts with diameters less than 24 inches shall be tightly and smoothly secured with a bonding adhesive, Category 3, applied in 6-inch wide transverse strips on 12-inch centers. Sagging of the insulation shall not be permitted and sufficient bonding adhesive or fasteners shall be used to prevent this.

5.8 Insulation for air-distribution equipment and ducts shall be faced with jackets as specified under "Insulation Materials." Jackets shall be Type II for airconditioning.

5.9 At all joints, the jackets shall be lapped or covered as follows:

5.9.1 For insulation on airconditioning ducts and equipment the jackets at all joints shall be covered with 4-inch wide pressure sensitive vapor seal tape or butt strips of material identical to jackets, or shall have 2-inch wide laps drawn tight and secured with vapor seal adhesives, Category 2. The tape or laps shall be secured with flared staples spaced four (4) inches on centers, and 1-inch from edges of tape or laps. The joints and all openings where the facing is pierced or punctured by pins, staples or other means shall be coated with 2-inch wide strips of vapor barrier coating compound, Category 5, to provide a vapor tight covering.

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